

REMARKS

CLAIM OBJECTIONS

Claim 8 is objected to under 37 CFR 1.75, as being of improper dependent form for failing to further limit the subject matter of a previous claim. The Applicant thanks the Examiner for such a thorough review of the claims and notes that the current claims corrects the typographical error in original claim 8.

35 USC §103

Claims 1-2, 4-6 and 8-24 are rejected under 35 USC §103(a) as being unpatentable over JP 10287939, JP 03072043, JP 04165037, or JP 01096374.

Claims 11-24 are rejected under 35 USC §103(a) as being unpatentable over JP 2002-069550.

The Applicant respectfully disagrees, especially in view of the amendments presented herein.

The Examiner I believe appreciates the fact that different alloys are being created to have different characteristics and properties. A description of this concept is found in the current original application at paragraphs 22 and 23, which the Applicants respectfully ask the Examiner to review in detail. Therefore, it is important when certain metals and components are added or left out – and thus, the concept of an alloy cannot be generalized to say that any combination of three metals will accomplish the same goal as three other metals or components.

Turning to the references, all of the independent claims are amended herein to consist of copper, tin and then at least one additional element from the list shown in the claim. None of those elements are silver. Therefore, JP 2002-069550 can immediately be withdrawn, since it requires silver.

JP 03072043 requires that the copper alloy contain iron and phosphorus. The alloys further ***optionally*** comprises tin. This reference is irrelevant, because the currently claimed alloys do not require phosphorus – which is obviously important in the '043 reference.

JP 04165037 and JP 10287939 requires that the copper alloy contain tin and chromium. Chromium is removed from the current claims and will be pursued with the set of copper-silver claims that are pursued through a divisional application. The chromium is

not required in the copper-tin ternary alloys. Therefore, this reference is irrelevant to the current claims and prosecution.

The Applicants require the Examiner to provide additional information regarding JP 01-096374 (1989). Although it was cited in an Information Disclosure Statement, it isn't clear why this Japan application is being cited for more than just state of the art. If the Examiner provides an additional office action and continues citing this reference, the Applicants require a more detailed statement as to its relevance.

Second, the Examiner's comment regarding one of ordinary skill in the art just picking and choosing among all of the elements to add to a sputtering target is overstatement. In all of the cited references, different groups of elements are added to achieve different results – whether it's corrosion resistance, adhesion to other layers, electrical discharge characteristics, etc. Therefore, one of ordinary skill in the art is going to choose those elements that work in concert with copper and tin to achieve the desired results for the sputtering target (lack of warpage, ability to withstand heat) or the sputtered layer (ability to adhere, not corrode, have increased electrical properties, etc.).

All of this information being said, the Applicant herein amends claim 1 to show that the first added element is tin. The second, and in some cases, the third added elements are designed to work with tin to provide a copper sputtering target that is superior to those in the cited art. In addition, all of the references teach different combinations of elements but **none** of the references teach, disclose or suggest a copper target comprising tin as a first added element, along with a second added element from the group consisting of Al, As, Au, B, Be, Ca, Cd, Co, Fe, Ga, Ge, Hf, Hg, Ir, Li, Mg, Mn, Nb, Ni, Pb, Pd, Pt, Sb, Sc, Si, Ta, Te, V, W, and Zn; or a third added element selected from the group consisting of Al,

As, Au, B, Be, Ca, Cd, Co, Fe, Ga, Ge, Hf, Hg, In, Ir, Li, Mg, Mn, Nb, Ni, Pb, Pd, Pt, Sb, Sc, Si, Ta, Te, V, W, and Zn.

REQUEST FOR ALLOWANCE

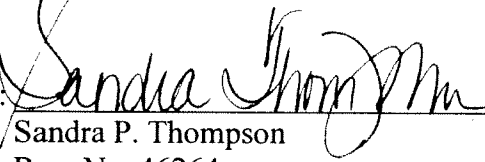
Claims 1-2, 4-6 and 8-24 are pending in this application and the Applicant respectfully requests that the Examiner reconsider the claims in light of the arguments presented and allow all pending claims.

Respectfully submitted,

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